



De Revolutionibus Orbium Caelestium, Libri IV

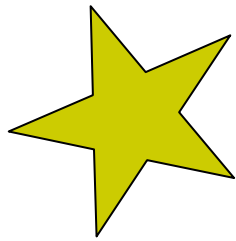
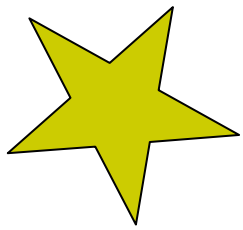
Nicolai Copernici
Torinensis

1543

Six Books on the
Revolutions of the
Heavenly Spheres

Nicholas Copernicus
of Torun

NS 102 Lecture 3



**Rocky Kolb-GnatSigh
Productions
Presents**

**UNRATED!!!!!!
contains cosmologically
explicit material**

***The Dialogue Concerning the
Two Chief World Systems***



April 13, 2004



**Salviati: Alissa Cambronne
Simplicio: Evelyn Rosas
Sagredo:**



NICOLAI CO
PERNICI TORINENSIS
DE REVOLVTIONIBVS ORBIS
um coelestium, Libri VI.

Habes in hoc opere iam recens nato, & ædito,
studiose lector, Motus stellarum, tam fixarum,
quàm erraticarum, cum ex ueteribus, tum etiam
ex recentibus obseruationibus reſtitutos: & no-
uis inſuper ac admirabilibus hypotheſibus or-
natos. Habes etiam Tabulas expeditiſſimas, ex
quibus eoſdem ad quoduis tempus quàm facilli-
me calculare poteris. Igitur eme, lege, fruere.

Ἀγεμετρετοὶ μηδὲς εἰσὶτω.

Norimbergæ apud Ioh. Petreium,
Anno M. D. XLIII.

Ageometretos
medeis eisito.

Let no one
untrained in
geometry enter
here.

Nicolaus Copernicus of Torun
Six Books on the Revolutions of the Heavenly Spheres

Diligent reader, in this work, which has just been created and published, you have the motions of the fixed stars and planets, as these motions have been reconstituted on the basis of ancient as well as recent observations, and have moreover been embellished by new and marvelous hypotheses. You also have most convenient tables, from which you will be able to compute those motions with the utmost ease for any time whatever. Therefore buy, read, and enjoy (*eme, lege, fruere*).

Let no one untrained in geometry enter here.

Nuremberg
Johannes Petreius
1543

To the Reader Concerning the Hypotheses of this Work.

There have already been widespread reports about the novel hypotheses of this work, which declares that the earth moves whereas the sun is at rest in the center of the universe ... it is the duty of an astronomer to compose the history of the celestial motions through careful and expert study. Then he must conceive and devise the causes of these motions or hypotheses about them. Since he cannot in any way attain to the true causes, he will adopt whatever suppositions enable the motions to be computed.... For these hypotheses need not be true nor even probable. On the contrary, if they provide a calculus consistent with the observations, that alone is enough.

So far as hypotheses are concerned, let no one expect any thing certain from astronomy, which cannot furnish it, lest he accept as the truth ideas conceived for another purpose, and depart from this study a greater fool than when he entered it.



Copernicus

***“Mathemeta
mathematicus
scribuntur.”
(Astronomy
is for
Astronomers.)***

**From the preface to
*De Revolutionibus***

Copernicus held these truths to be self evident:

- **Uniform Circular Motions**

“First of all, we must note that the universe is spherical”
Copernicus

“The axiom of astronomy: Celestial motions are circular and uniform or composed of circular and uniform parts.”
Erasmus Reinhold

- **Motions centered on the sun**

It hardly matters to me whether he [Copernicus] claims that Earth moves or that it is immobile, so long as we get an absolutely exact knowledge of the movements of the stars and the periods of their movements, so long as both are reduced to altogether exact calculation

-- Gemma Frisius (astronomer)

... the subject of Copernicus is astronomy, whose most distinctive methodology is to use false and imaginary principles for saving appearances.

-- from Church decree placing
De Revolutionibus on the Index

DESIDERATA

- 1) Common Sense**
- 2) Simple**
- 3) Reproduce observations**



...the arguments against the movement of Earth are very plausible ... the experiences that overtly contradict the annual movement [of Earth] are so great, that there is no limit to my astonishment when I reflect that Copernicus was able to make reason so conquer sense, that in defiance of the latter, the former became mistress of his belief.

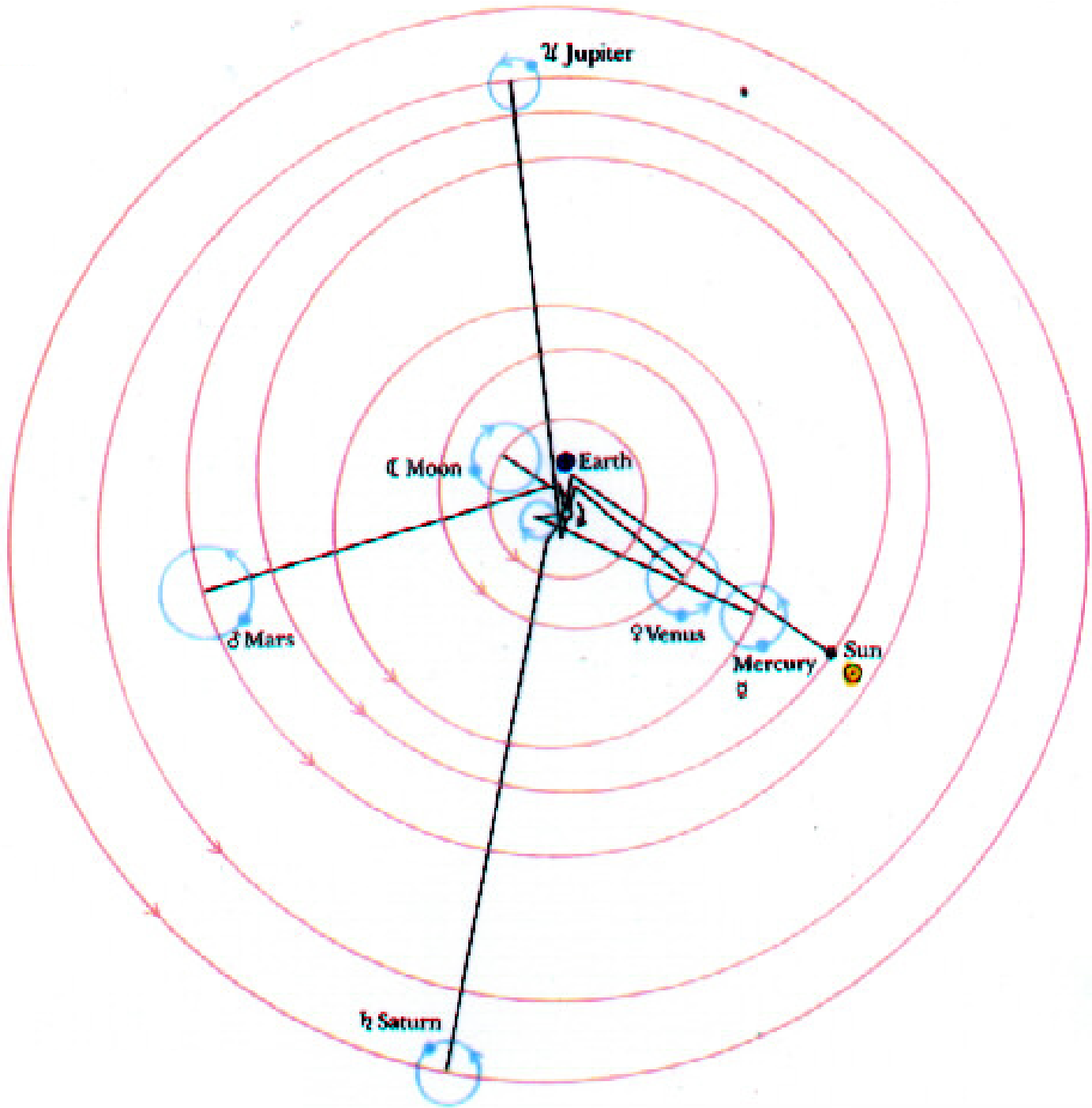
Galileo, 1632

Dialogue Concerning the Two Chief World Systems

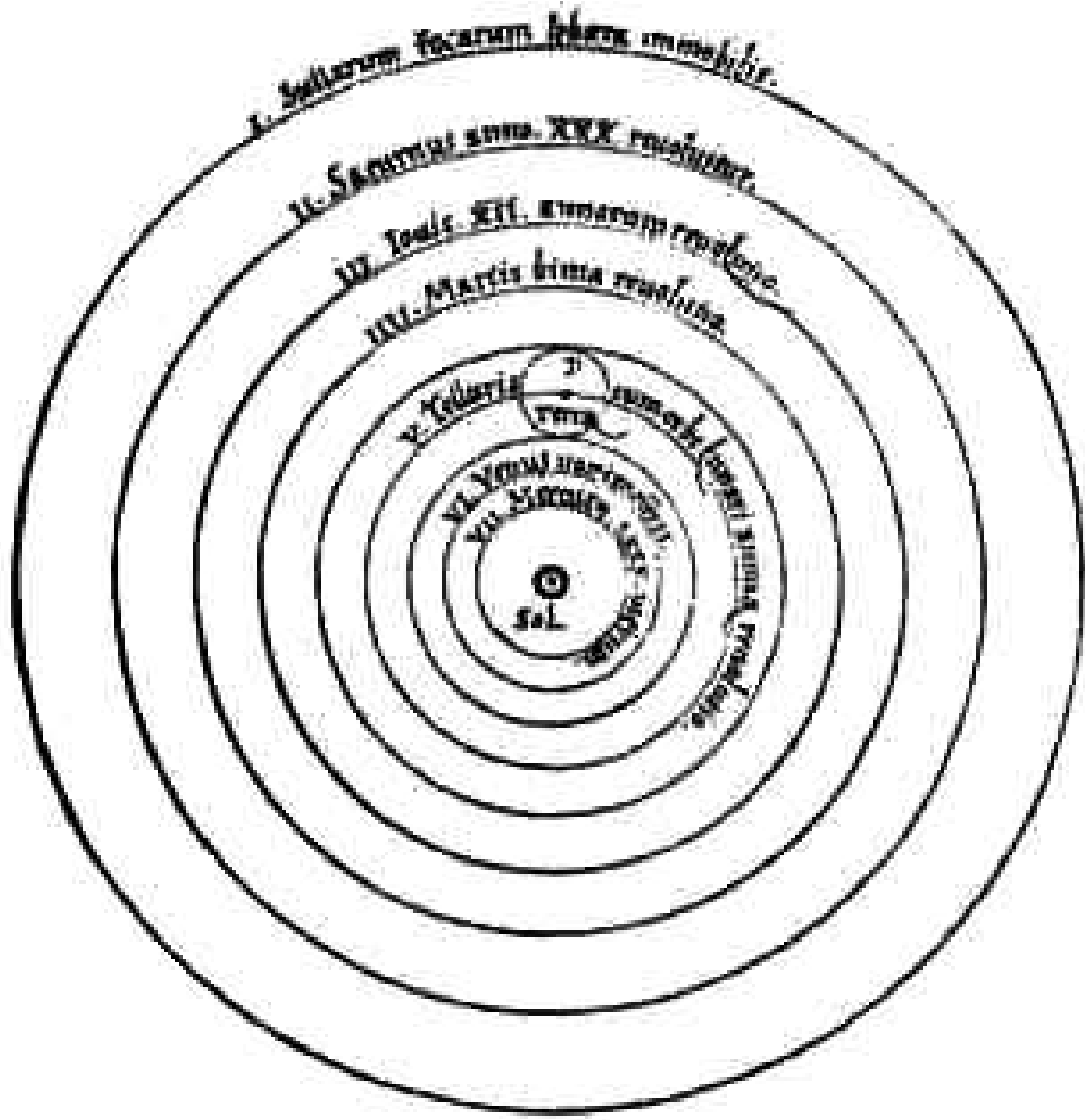
DESIDERATA

- 1) Common Sense**
- 2) Simple**
- 3) Reproduce observations**

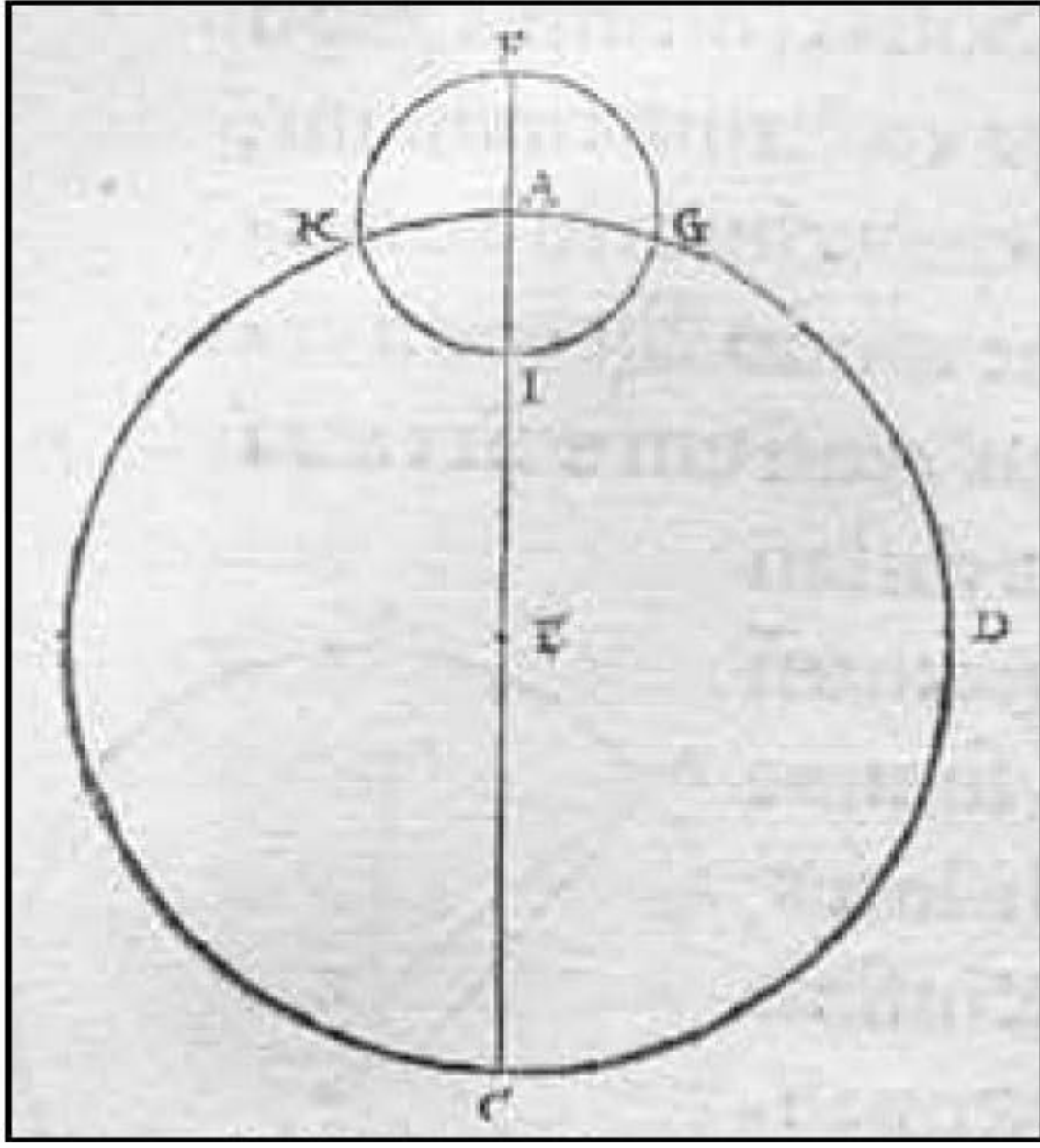
The Ptolemaic System



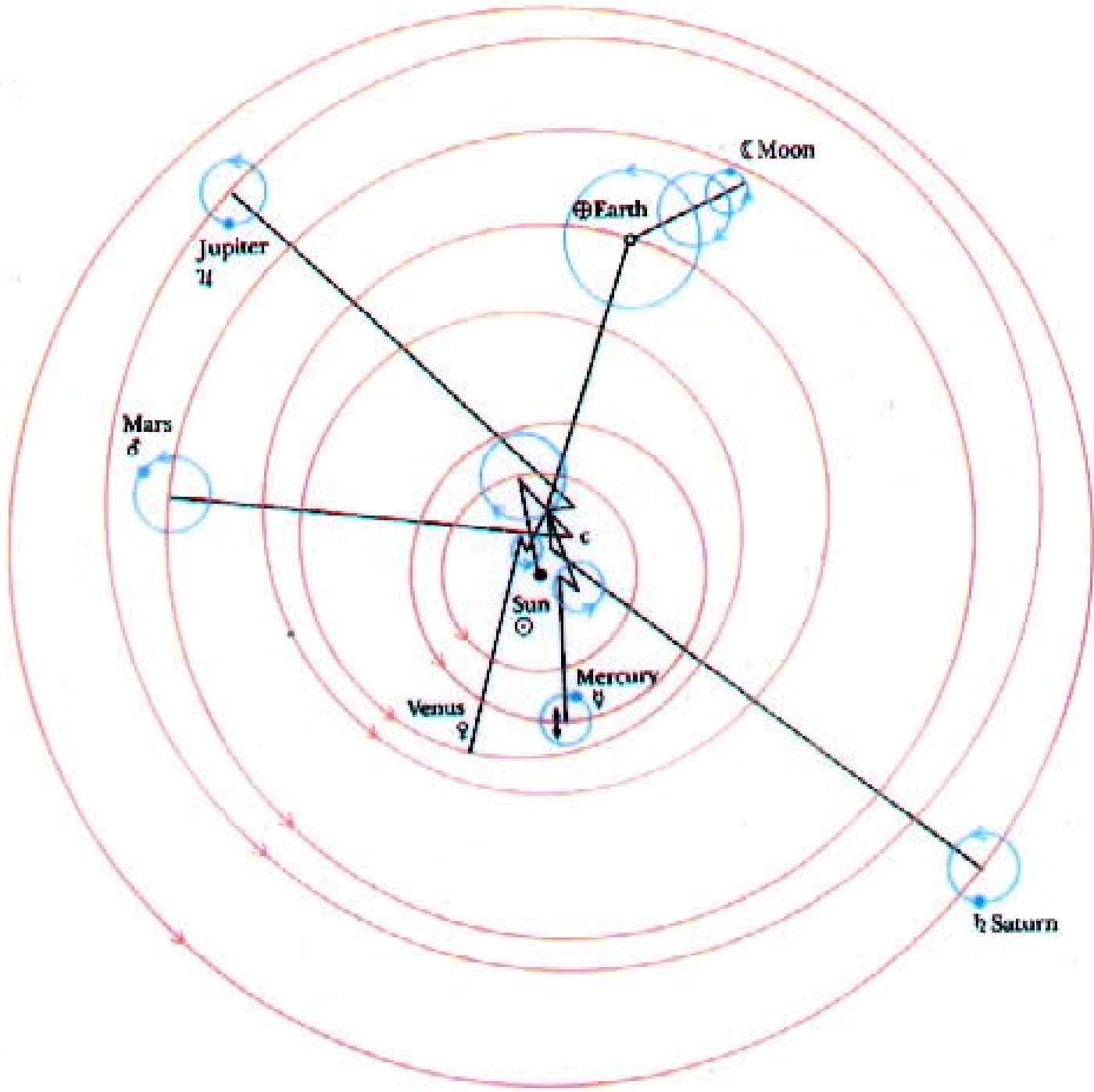
From Book I of De Revolutionibus



From Book III of De Revolutionibus



From Book III of De Revolutionibus



DESIDERATA

- 1) Common Sense**
- 2) Simple**
- 3) Reproduce observations**

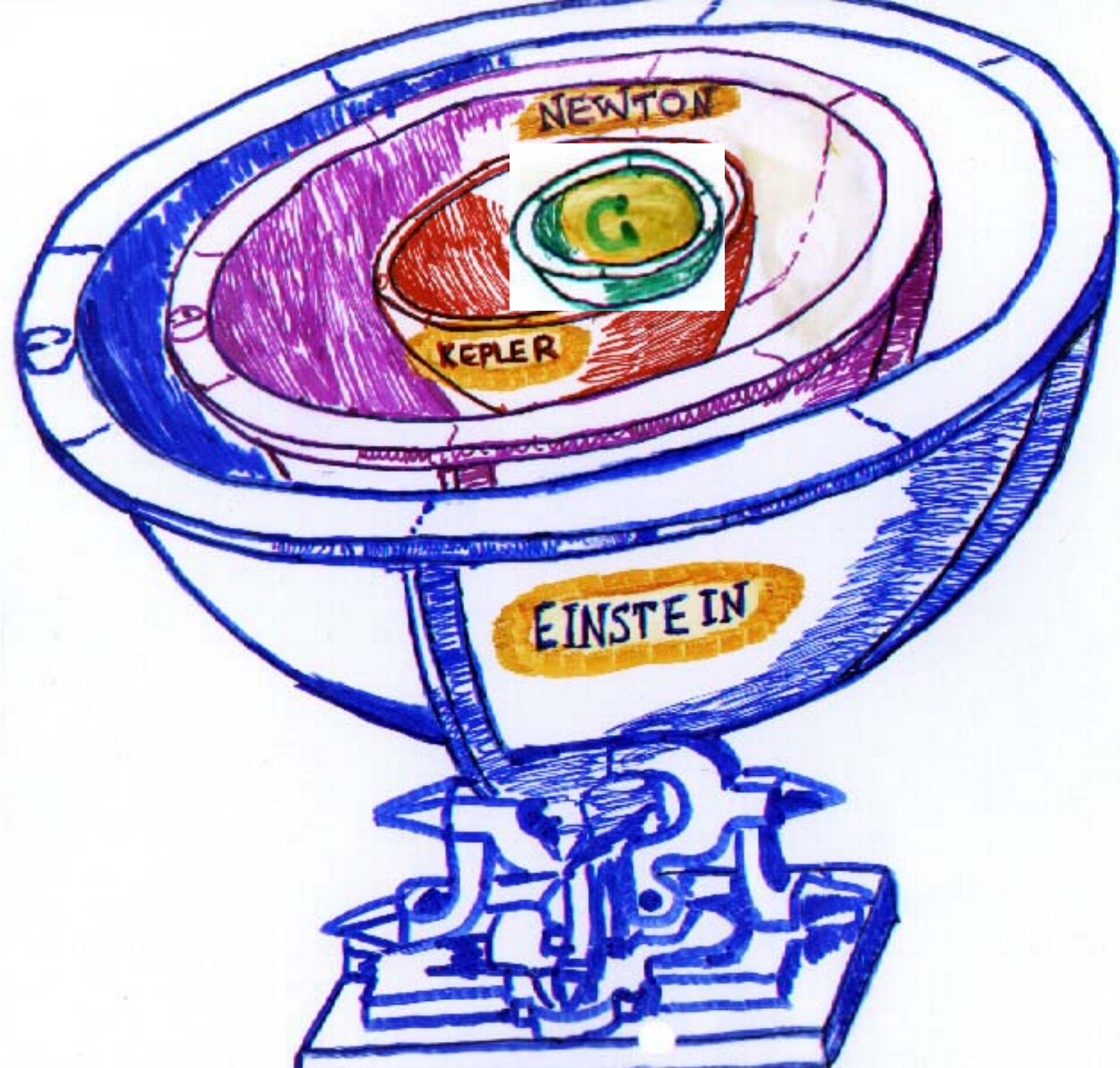


In advocating and fighting for the Copernican theory, Galileo was not only motivated by a striving to simplify the representation of the celestial motions. His aim was to substitute for a petrified and barren system of ideas the unbiased and strenuous quest for a deeper and more consistent comprehension of the physical and astronomical facts.

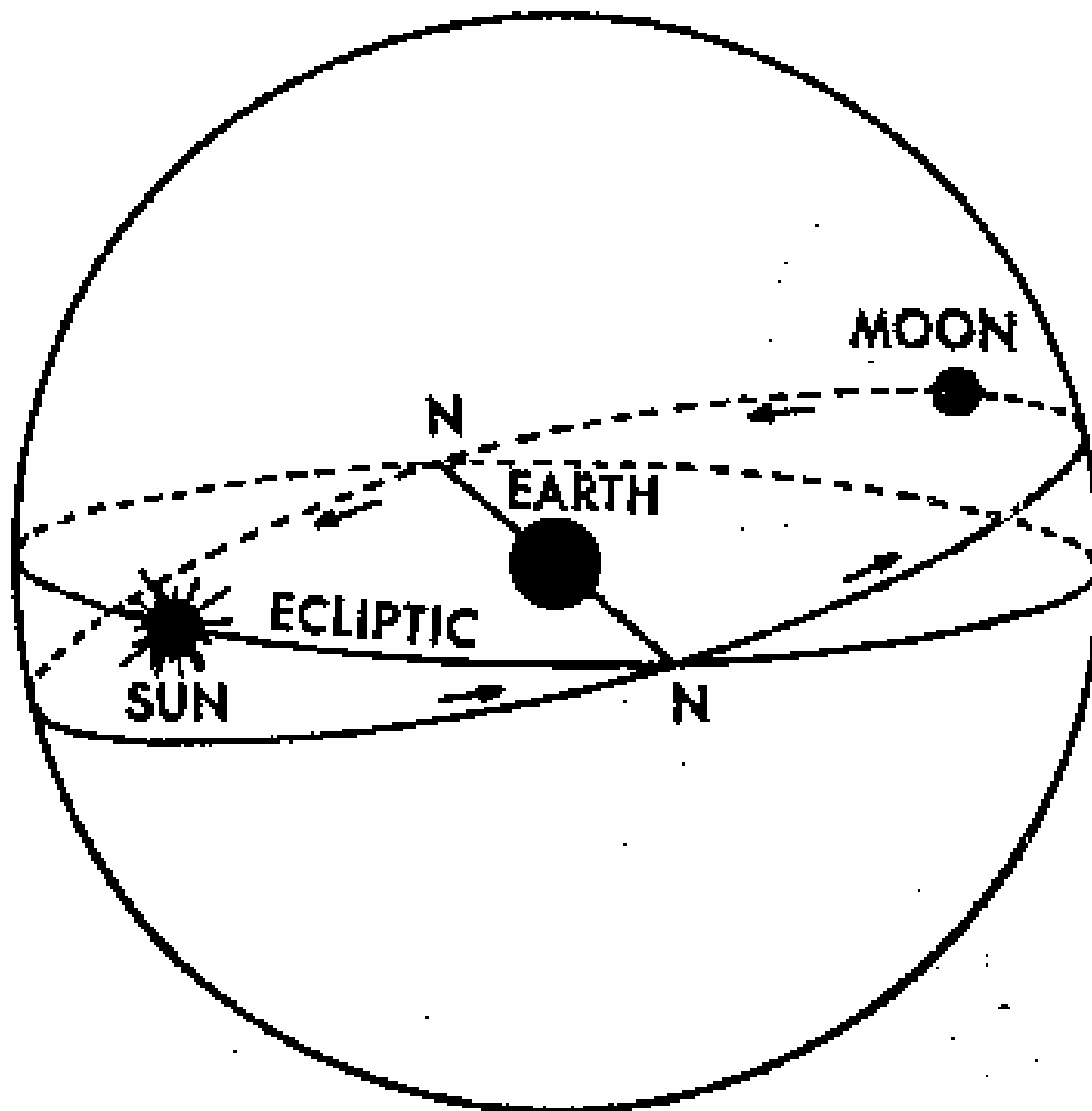
Albert Einstein

in the foreword to the Drake translation of Galileo's Dialogues





NODES OF THE MOON'S ORBIT

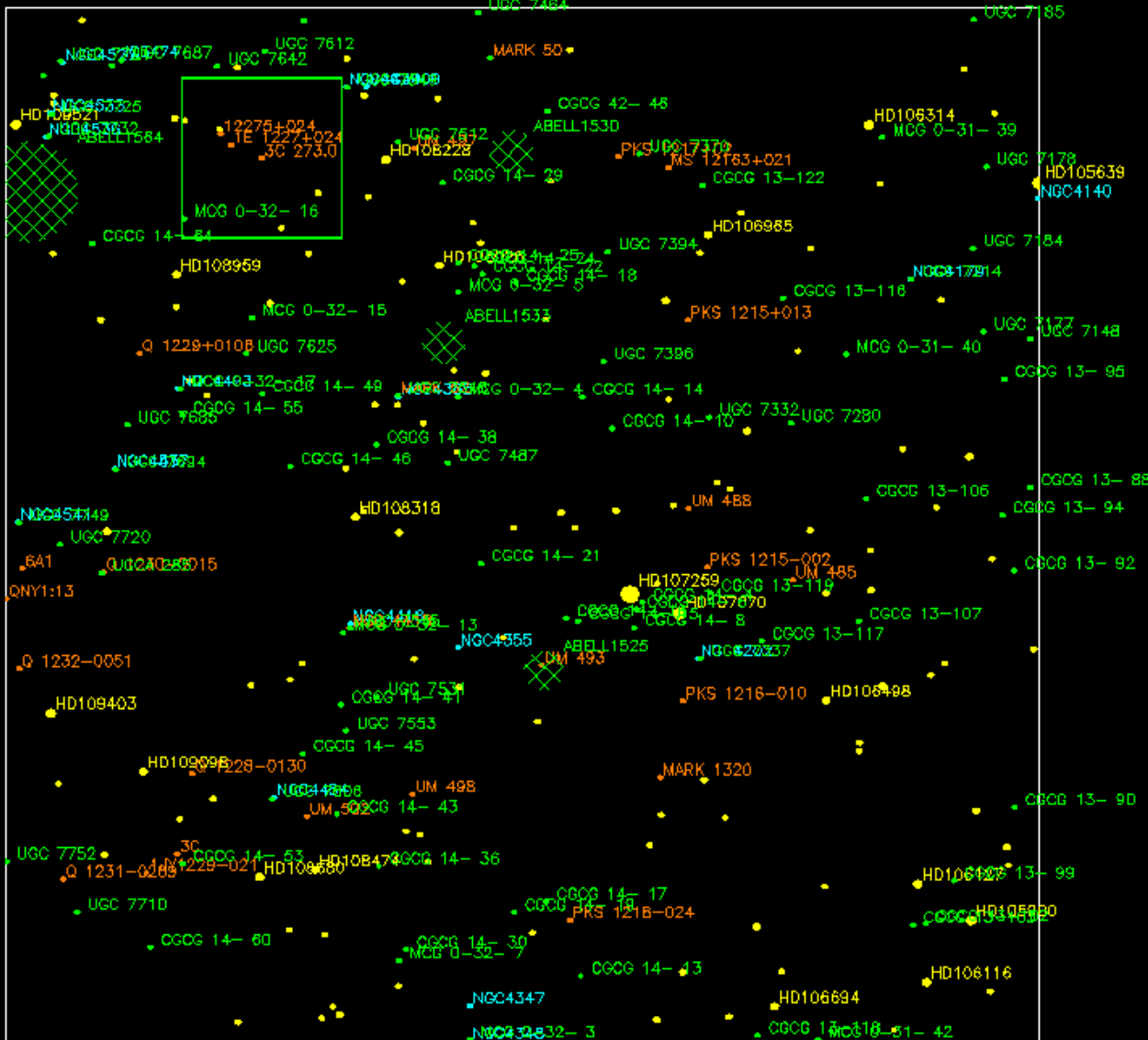


POSS-II Red Plate XP860

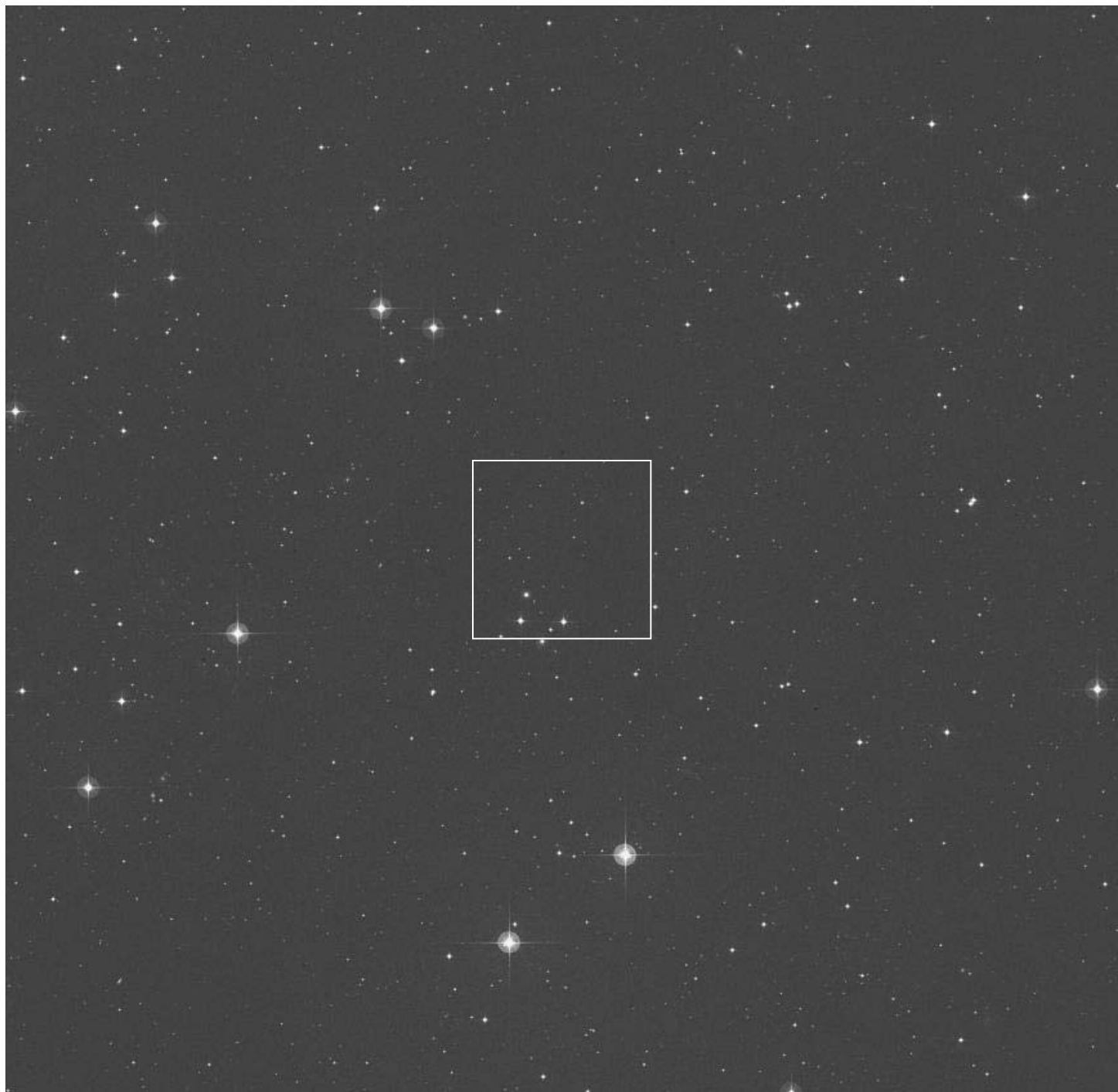


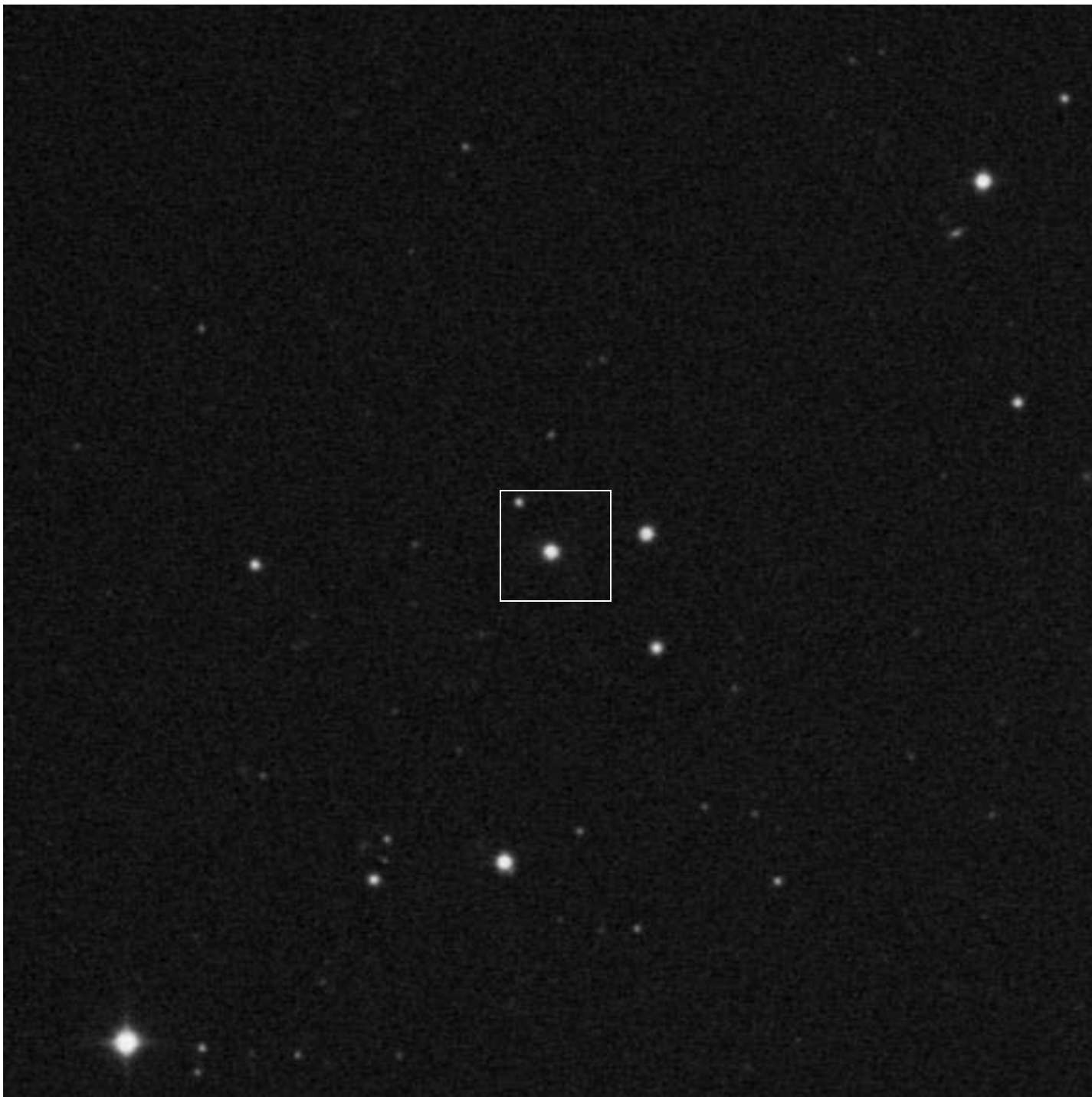
6°

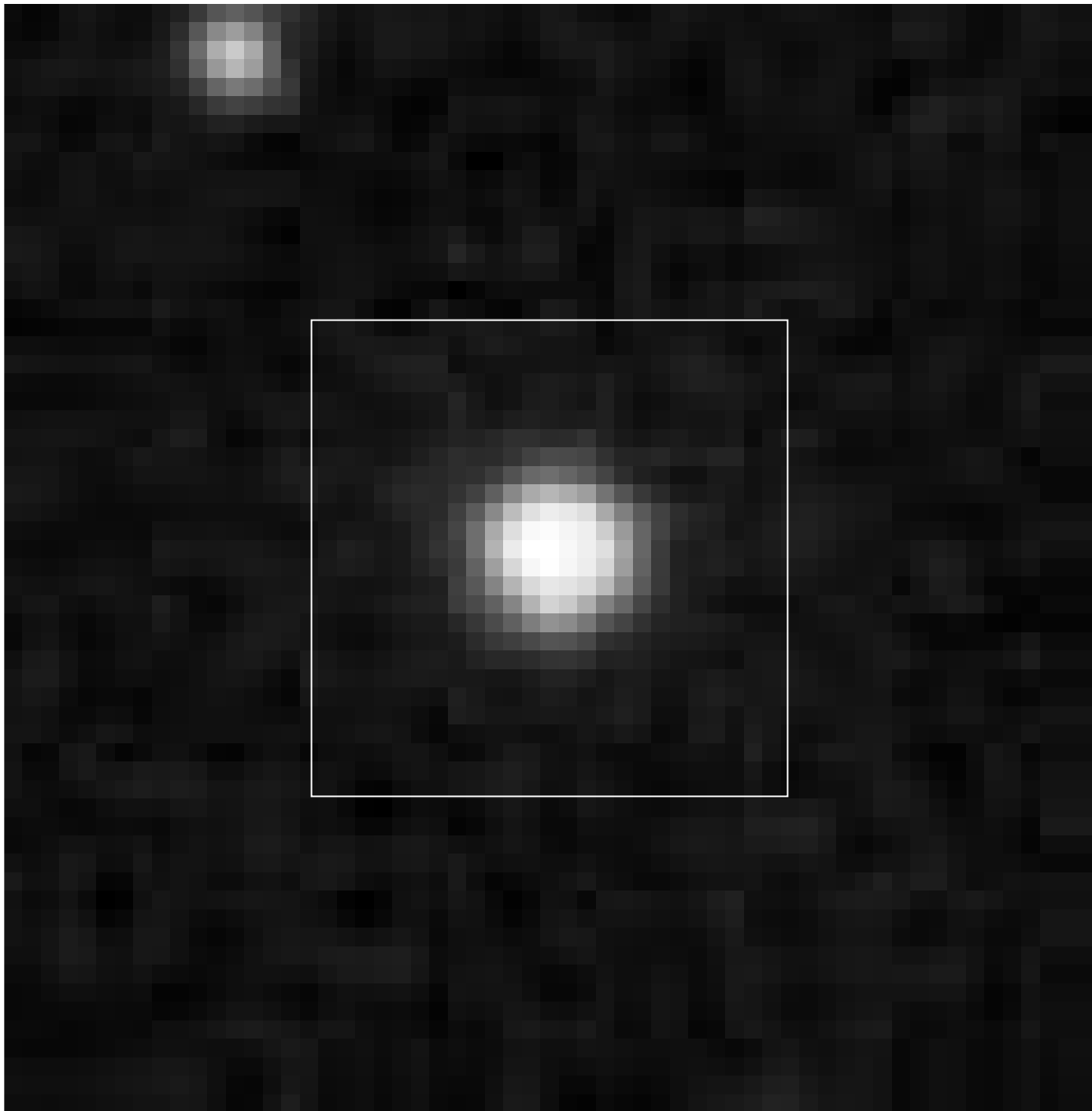
POSS-II Red Plate XP860

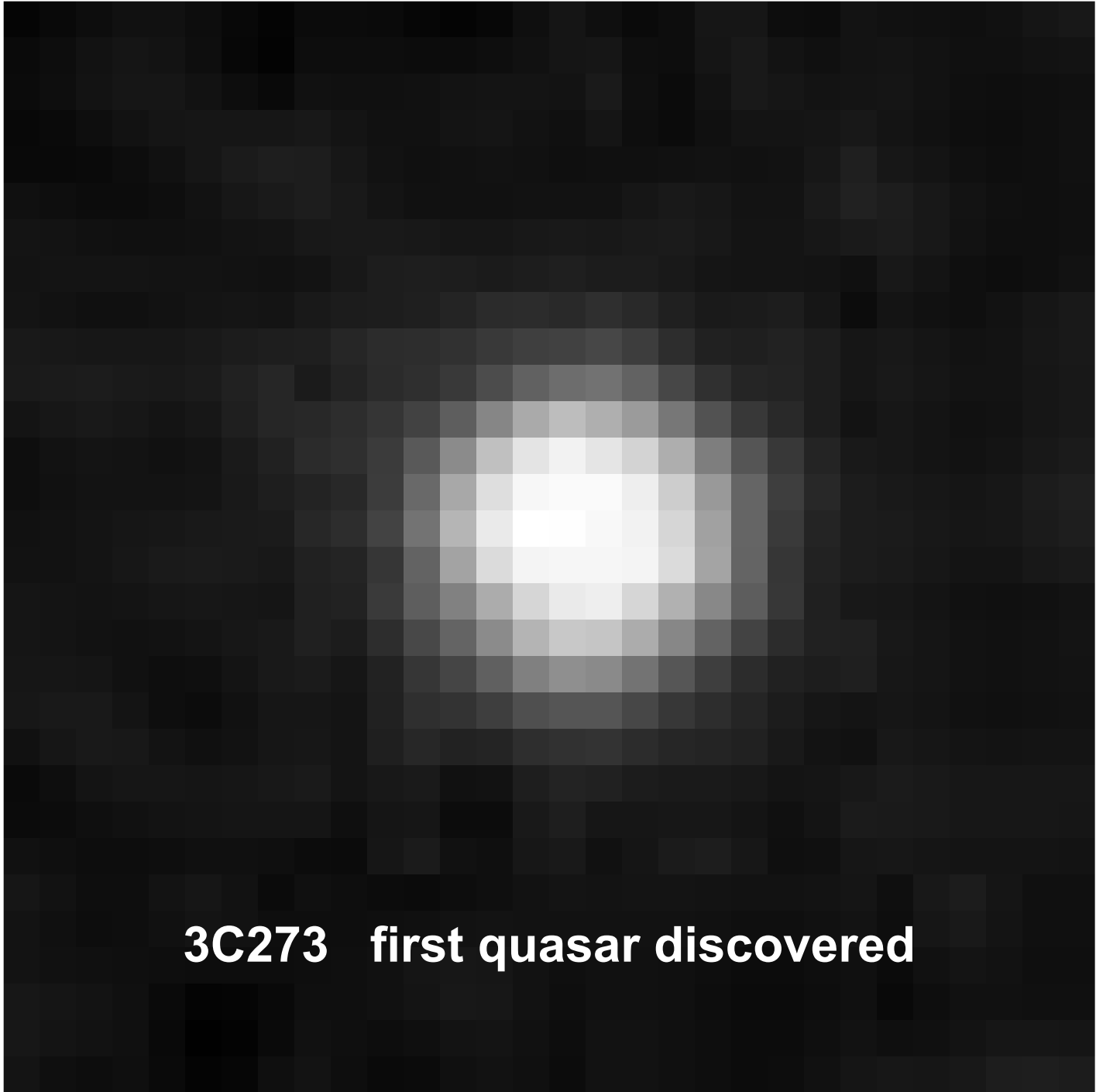


6c









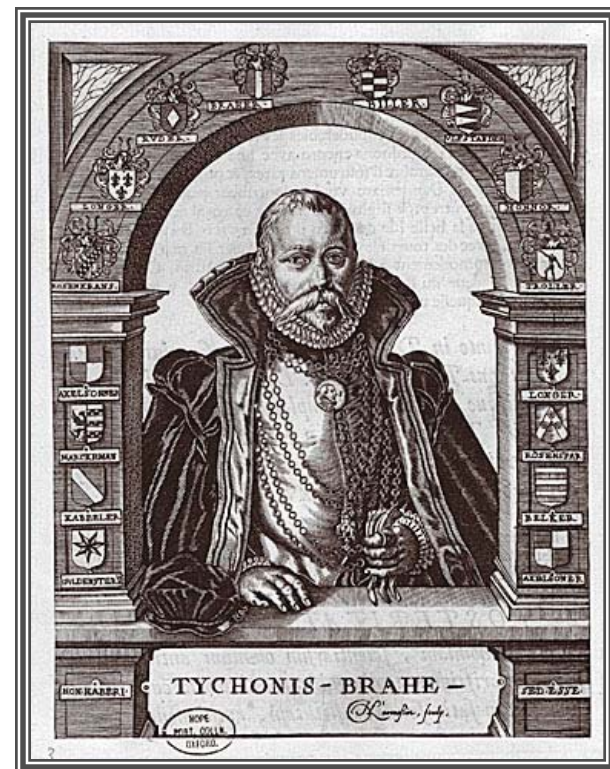
3C273 first quasar discovered

Tycho Brahe

Tyge Brage

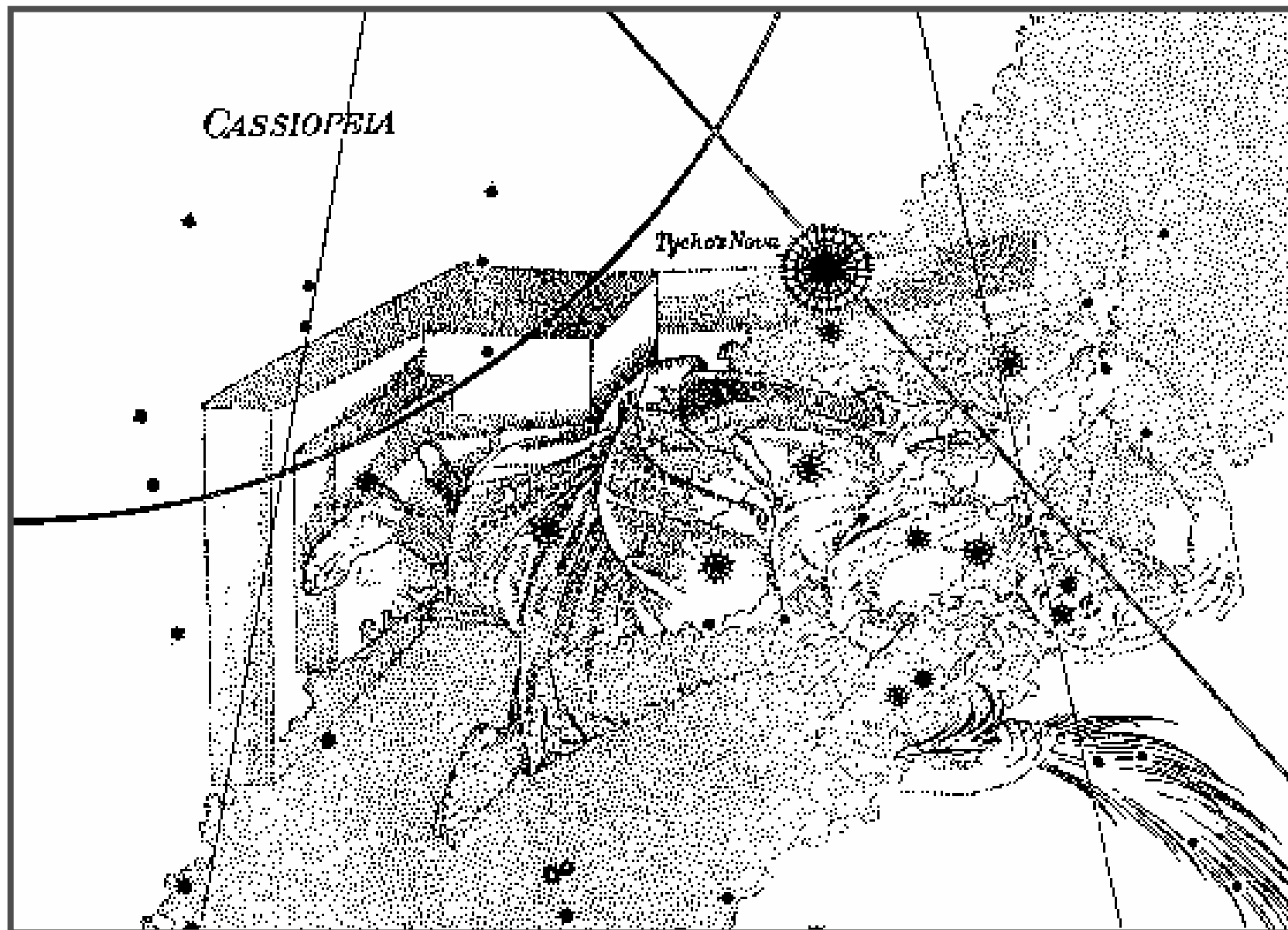
1546 - 1599





CASSIOPEIA

Tychos Nova



George Busch (German painter) in 1572:

“It is a sign that we will be visited by all sorts of calamities such as inclement weather, pestilence, and Frenchmen.”

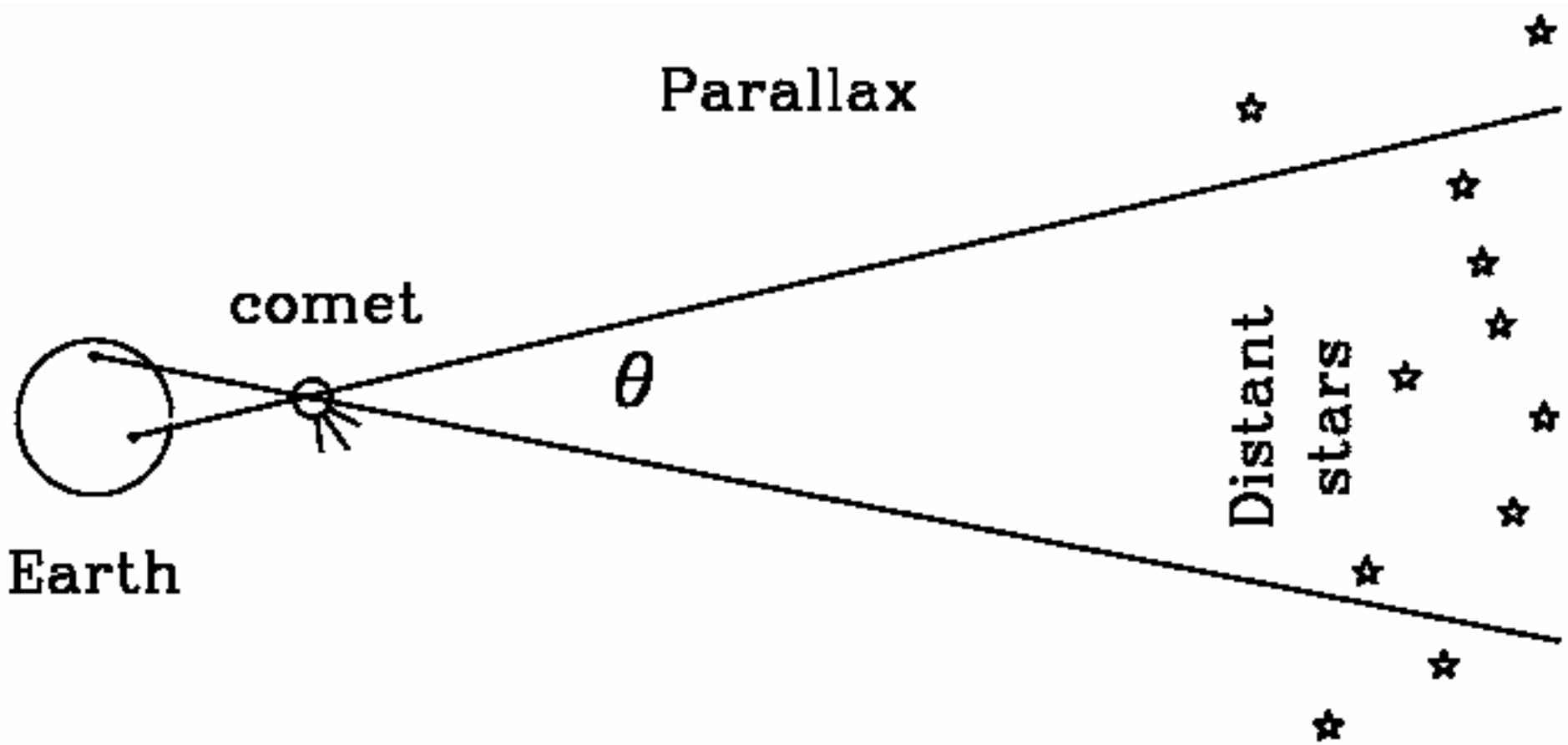
Monastic Chronicles re: Supernova 1006:

“in 1006 there was a very great famine and a comet appeared for a long time”

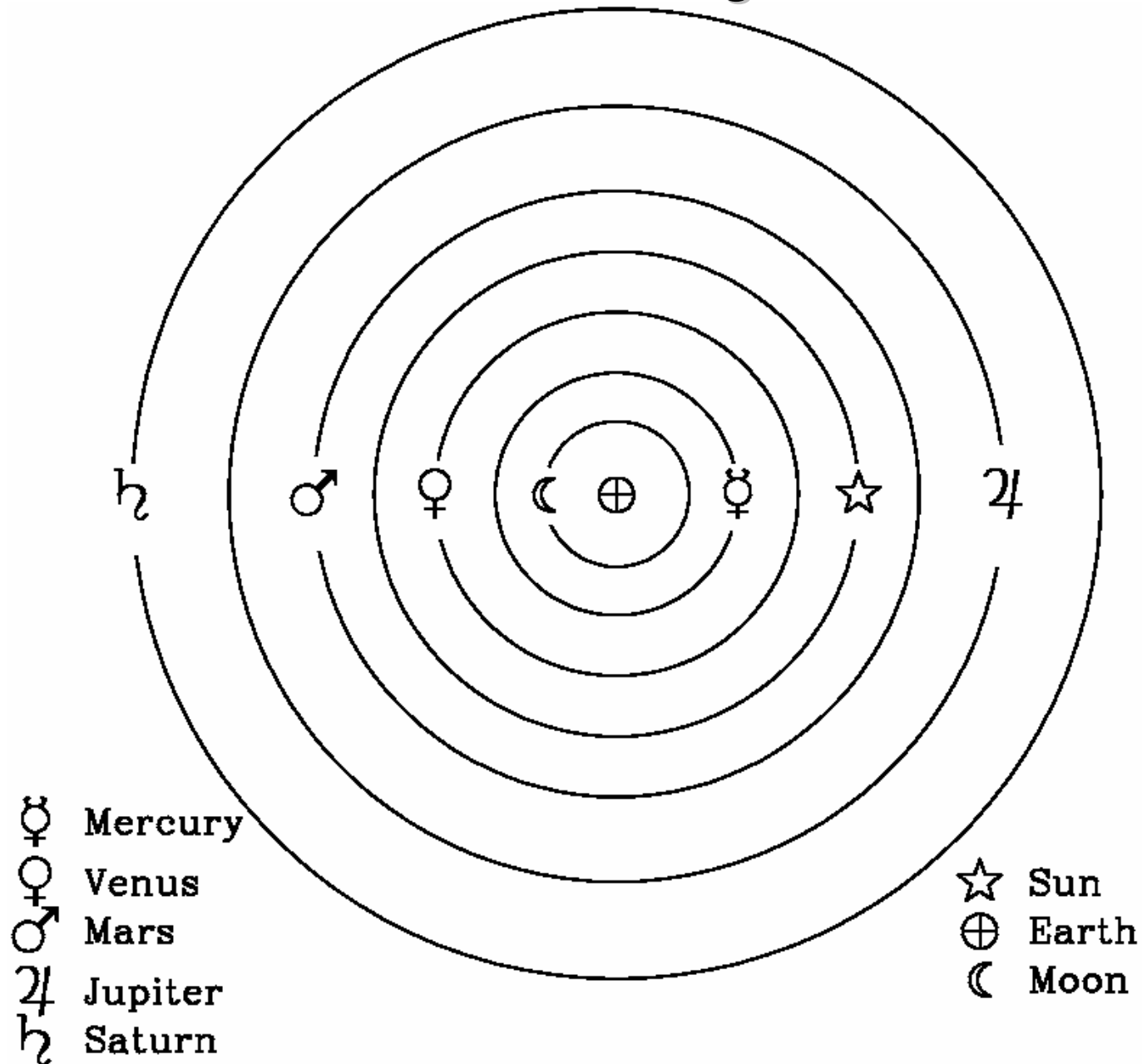
“at the same time a comet, which always announces human shame, appeared in the southern regions, which was followed by a great pestilence...”

“three years after the king was raised to the throne, a comet with a horrible appearance was seen in the southern part of the sky, emitting flames this way and that...”





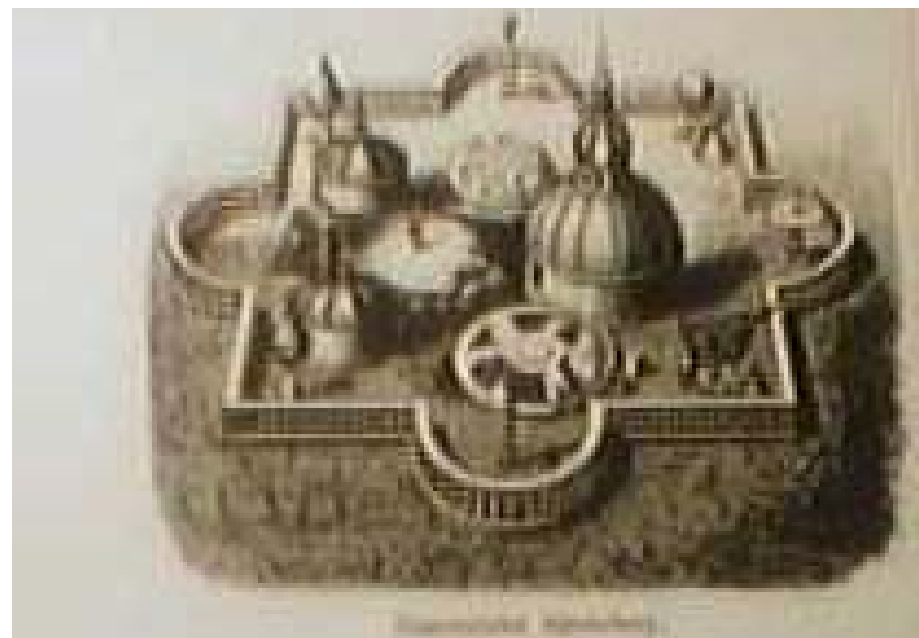
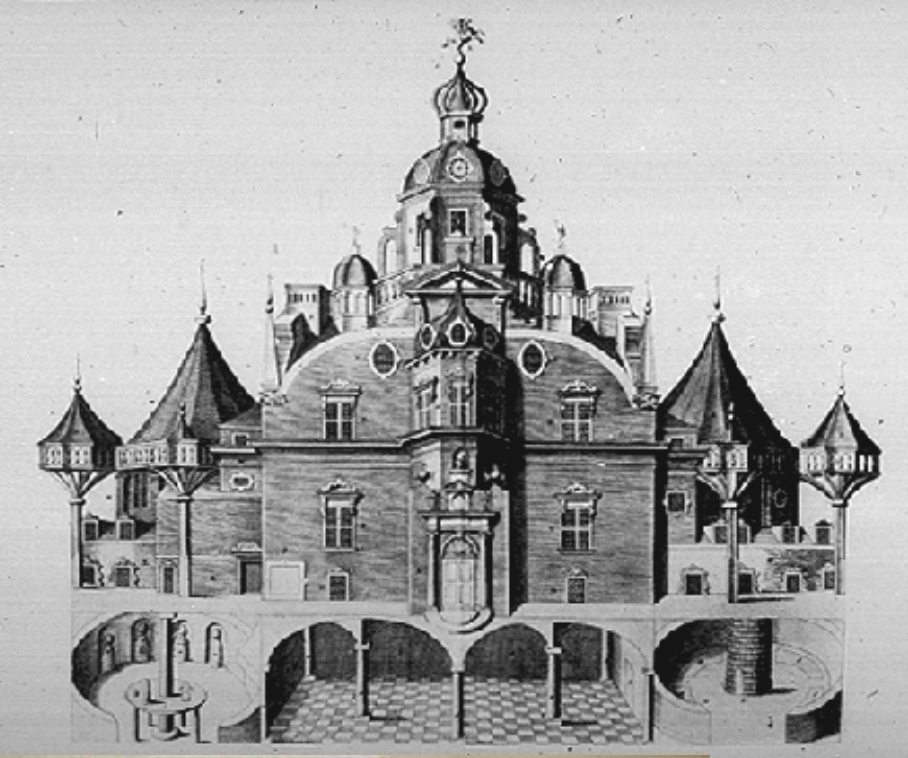
The Universe According to Aristotle



O crassa ingenia. O cæcos cœli spectatores.

Oh thick wits. Oh Blind Watchers of the Sky.

-- Tycho Brahe 1573

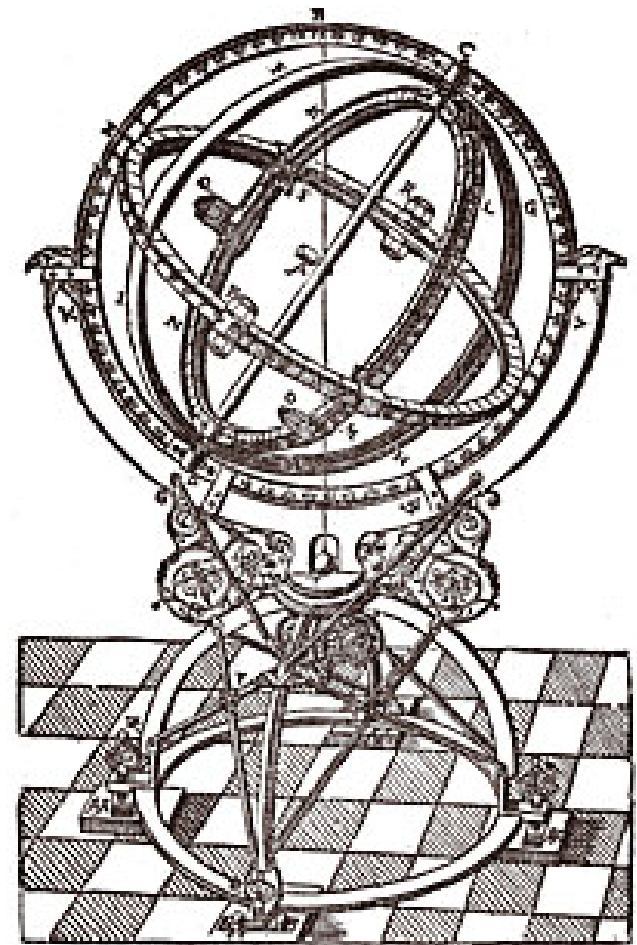


Uraniborg





ARMILLÆ ALIÆ ÆQVATORIÆ.

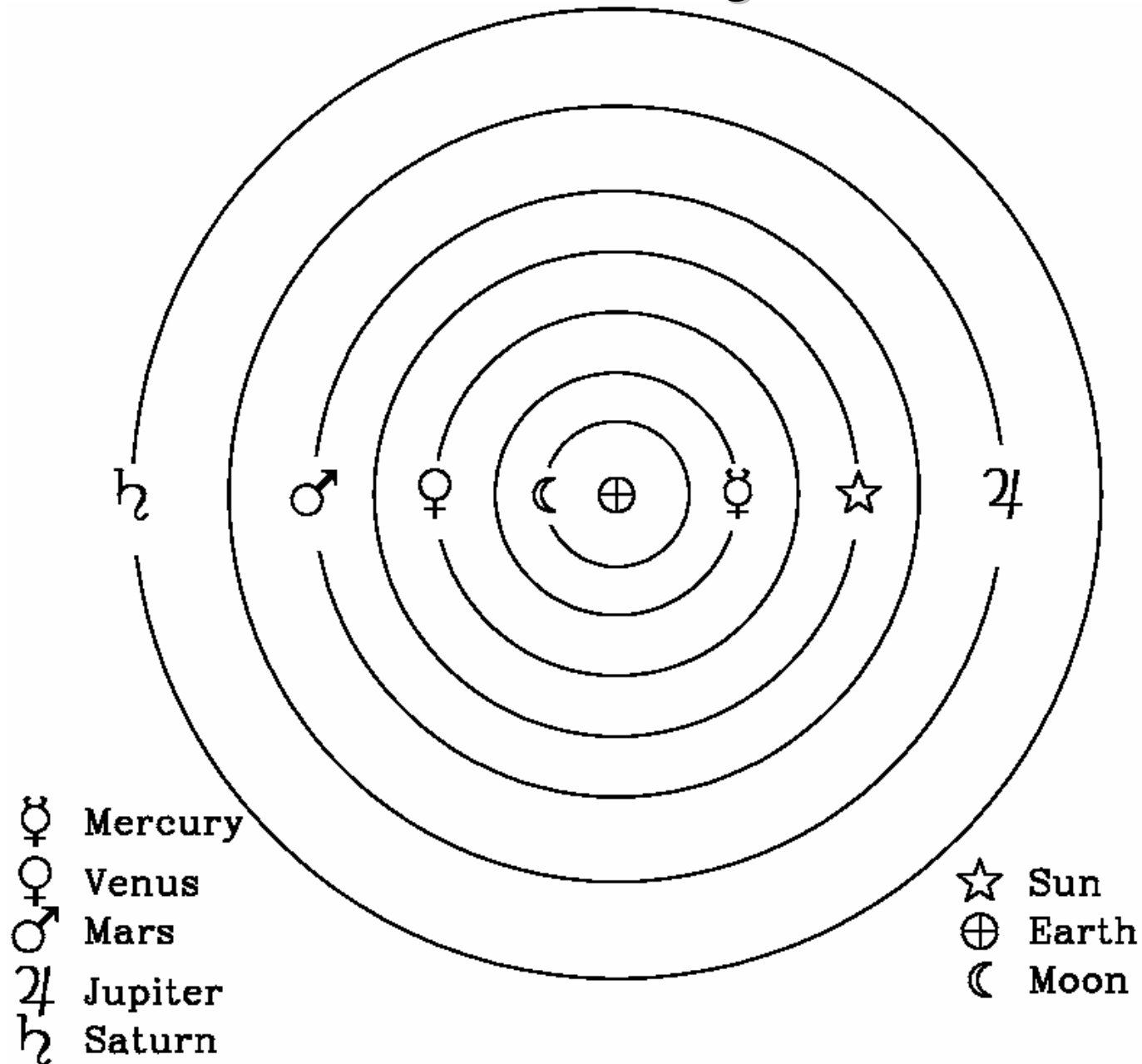




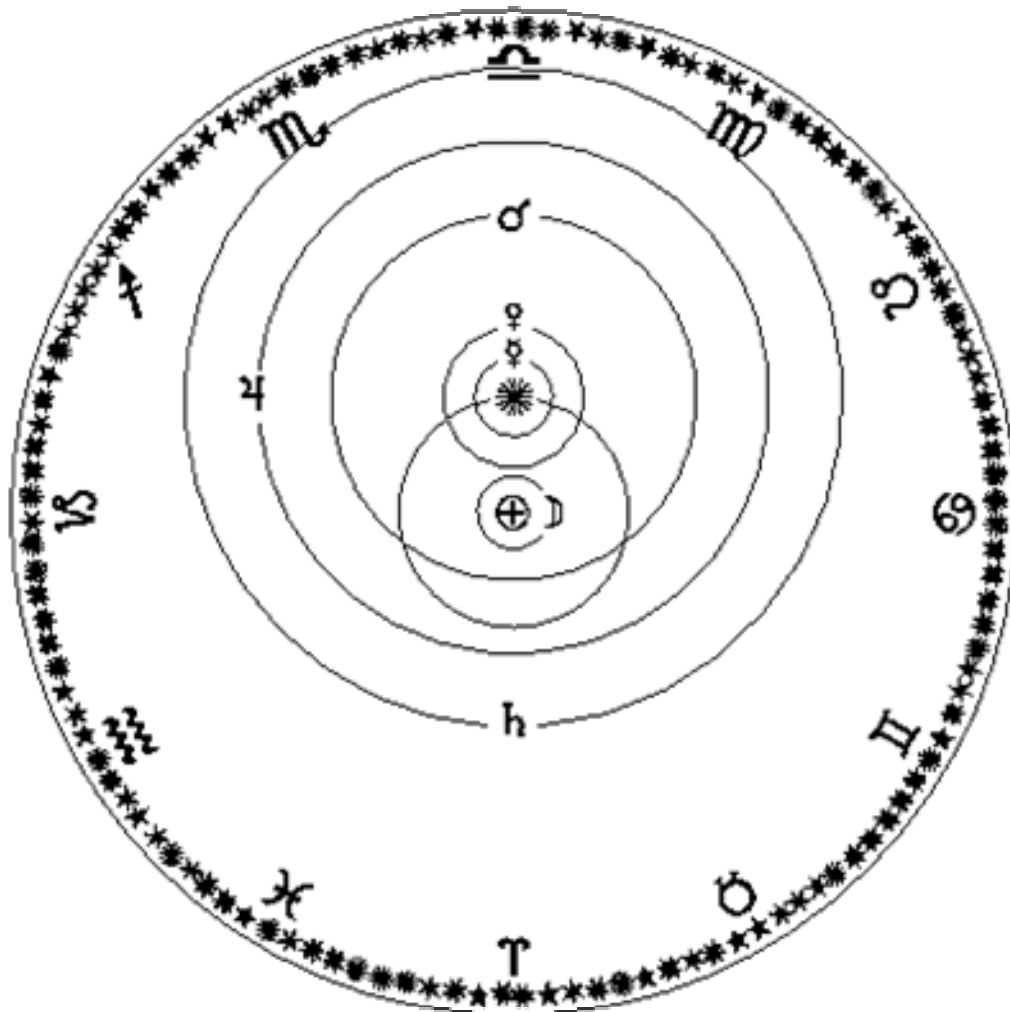
Tycho with the King



The Universe According to Aristotle

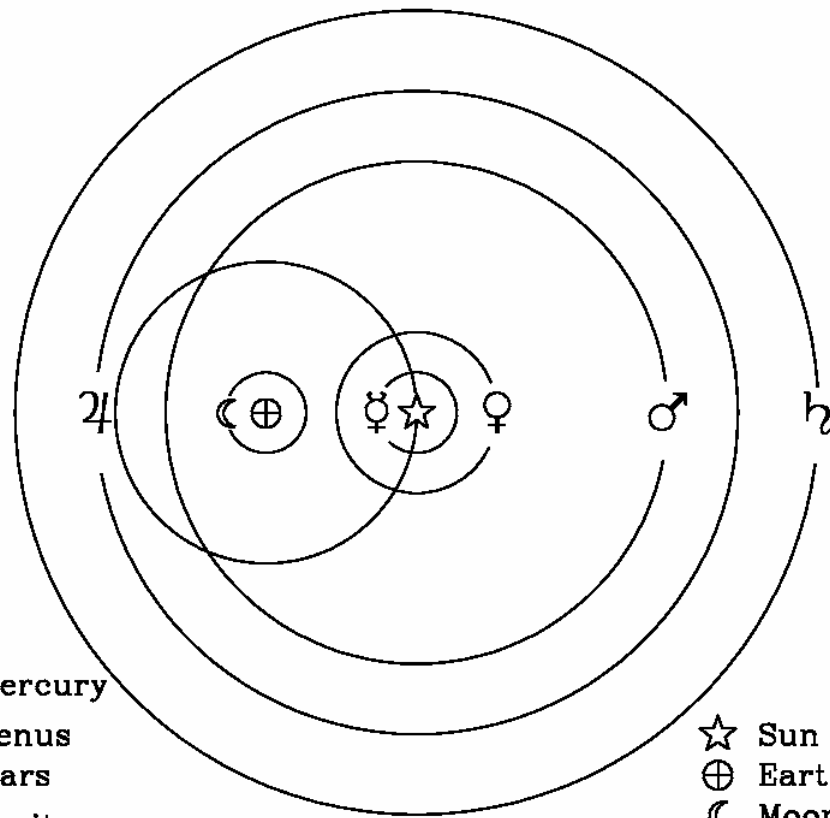


NOVA MVNDANI SYSTEMATIS HYPOTYPOSIS AB
AUTHORE NUPER ADINUENTA, QUA TUM VETUS ILLA
PTOLEMAICA REDUNDANTIA & INCONCINNITAS,
TUM ETIAM RECENS COPERNIANA IN MOTU
TERRÆ PHYSICA ABSURDITAS, EXCLU-
DUNTUR, OMNIAQUE APPAREN-
TIIS CŒLESTIBUS APTISSIME
CORRESPONDENT.



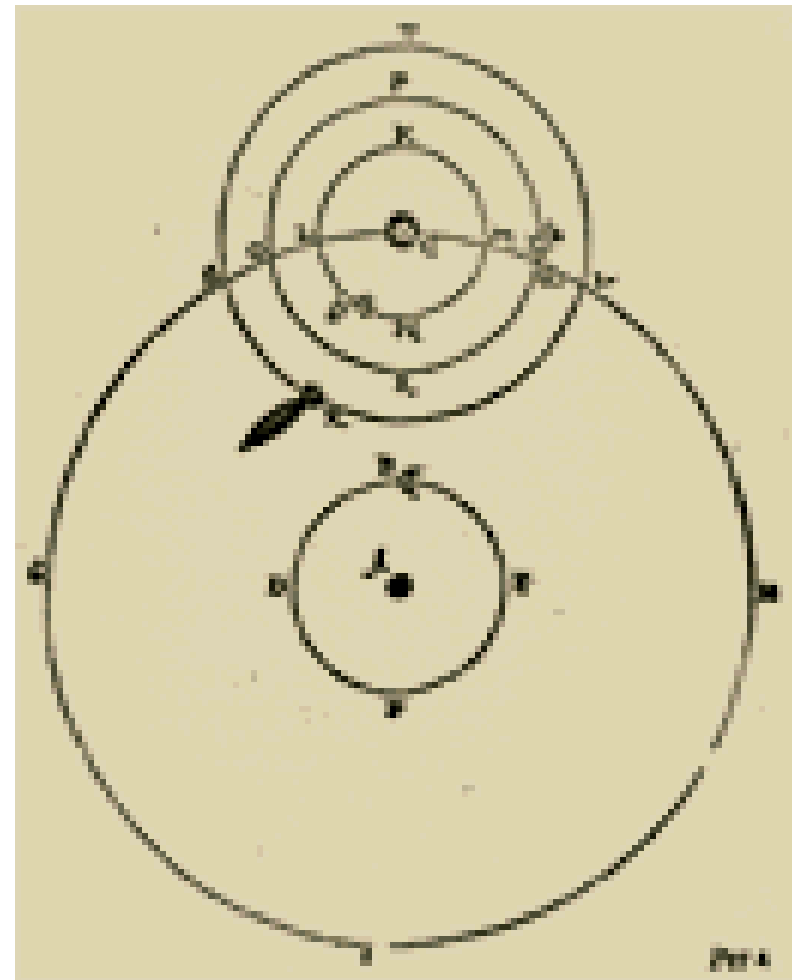
“avoiding both the
mathematical absurdity
of Ptolemy and the
physical absurdity of
Copernicus”

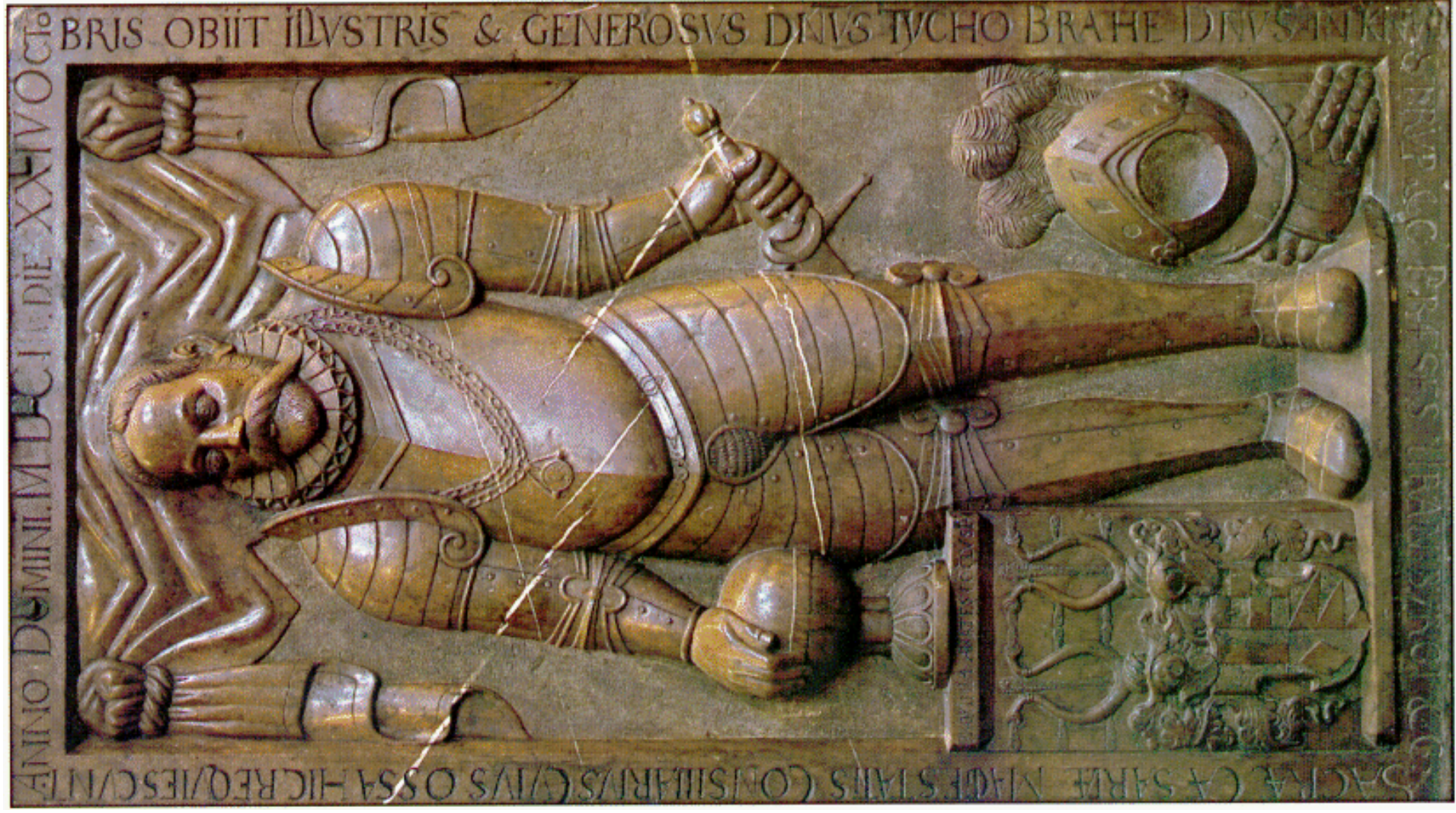
The Tychonic Arrangement

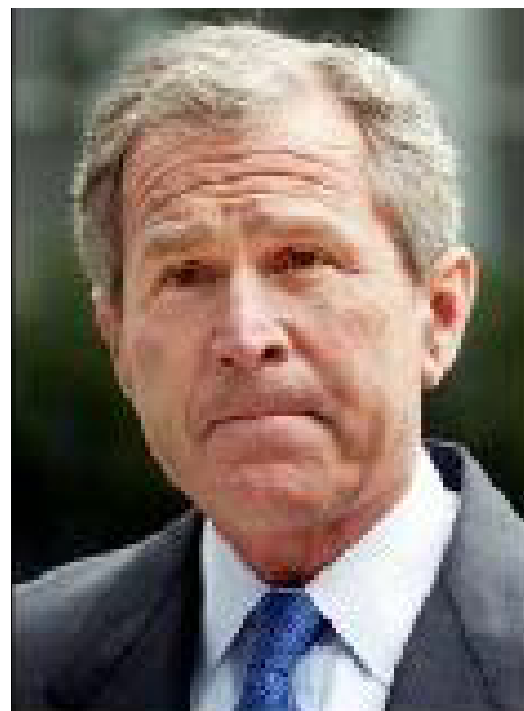
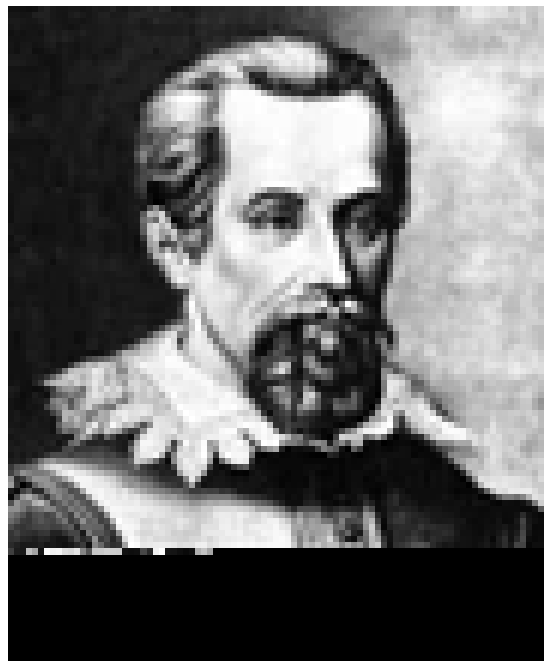


♿ Mercury
♀ Venus
♂ Mars
♄ Jupiter
♄ Saturn

☆ Sun
⊕ Earth
☾ Moon







Johannes Kepler:

Kepler, Keppler, Khepler, Kheppler, and Keplerus

Michelangelo Merisi:

Merisi, Amerigi, Merigi, Merici, Morisi, Merisio, Morigi,
Morisimus, Amarigi, Marigi, Marisi, Narigi, Moriggia,
Marresi, and Amerighi

...at the age of 4, I nearly died of smallpox.

... my hands were badly crippled.

... during the age of 14 & 15 I suffered continuously from skin ailments, severe sores, scabs, putrid wounds on my feet.

... on the middle finger of my right hand I had a worm.

... I had a huge sore on my left hand.

... when 16 I nearly died of a fever.

... at 19 I suffered from headaches and disturbances of my limbs.

... I continuously suffered from the mange and the dry disease.

... at the age of 20 I suffered a disturbance of the body and mind.

...once, at the urging of my wife, I took a bath.

... it's heat constricted my bowles and nearly killed me.

... I believe I am one of those people whose gall bladder has a direct opening into the stomach. Such people are short-lived as a rule.

...I hated Kolinus.

... Braunbaum was my enemy.

... I willingly incurred the hatred of Seiffer.

... Ortholphus hated me as I hated Kolinus.

... Kleberus hated me as a rival.

... my talent made Rebstock hate me.

... Husalius opposed my progress.

... Jaeger betrayed me.

... at the age of 21 I gained knowledge of woman. I achieved this with the greatest possible difficulty, experiencing the most acute pains of the bladder.